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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,418	01/09/2006	Alan Lionel Hudd	ARC-141-582	6706
23117 7590 11/24/2009 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER				
LEE, DORIS L				
ART UNIT		PAPER NUMBER		
1796				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/530,418

Applicant(s)

HUDD ET AL.

Examiner

Doris L. Lee

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 11, 12, 17, 19-23 and 25 is/are pending in the application.
- 4a) Of the above claim(s) 19-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 11, 12, 17, 23 and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB06)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ ~~Notes of Informal Patent Application~~
- 6) ☐ Other: _____

DETAILED ACTION

1. The new grounds of rejection set forth below are necessitated by applicant's amendment filed on July 14, 2009. In particular, claim 25 which has been newly added and is the new independent claim. This was not present in the original claims. Thus, the following action is properly made final.
2. All outstanding objections and rejections, except for those maintained below, are withdrawn in light of applicant's amendment filed on July 14, 2009.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. **Claim 1** recites the limitation "polyether-modified polydimethylsiloxane". There is insufficient antecedent basis for this limitation in the claim because claim 25, from which claim 1 depends, only recites a acrylate-modified polydimethylsiloxane. Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. **Claim 1-6, 11-12, 17 and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Johnson et al (WO 99/29787)** in view of **Yamaguchi et al (WO 01/21717, please refer to US 2003/0040551 for English Language equivalent)** and **Wacker Silicones Corp, Booth 1105, Metal Finishing Volume 99, Issue 10, October 2001, Page 50.** (<http://www.sciencedirect.com/science/article/B6TX7->

455X3NP-7P/1/b2b67ba0ddc24327127f1f8949ac36df with evidence provided by
Turgis et al (US 2004/0157959).

Regarding claims 25, Johnson teaches a non-aqueous UV-curable ink composition (Abstract) for inkjet printing comprising a pigment (page 21, middle paragraph) such as carbon black (page 5, 3rd paragraph), a dispersant (page 21, middle paragraph) such as Solsperse 24000 (page 25, Table 1) which is a low molecular weight hyper dispersant, a dispersant synergist (page 21, middle paragraph) such as Solsperse 5000 (page 25, Table 1), a photo initiator (page 21, middle paragraph) and a diluent. Johnson teaches that the diluent is composed of mono-, di- tri- or higher functional material (page 8, last paragraph).

However, Johnson fails to teach a) the exact mixture of the reactive diluent .and b) the surfactant.

Regarding a) above, Yamaguchi teaches a UV curable ([0089]) printing ink vehicle ([0092]) which uses polymerizable media such as SR-9003 (propoxylated (2) neopentyl glycol diacrylate ([0072]), dipentaerythritol hexaacrylate ([0070]), dipropylene glycol diacrylate ([0070]), SR-499 (ethoxylated (6) trimethylol propane triacrylate) ([0072]), and SR-454 (ethoxylated (3) trimethylol propane triacrylate).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the components as taught by Yamaguchi as the mixture of reactive diluents of Johnson. One would have been motivated to do so in order to receive the expected benefit of increasing the film forming capability of the composition

(Yamaguchi, [0068]). They are combinable because they are both concerned with the same field endeavor, namely UV curable inks with reactive media.

Regarding b) above, Johnson teaches a UV-curable ink (Abstract) in which an acrylate modified polydimethylsiloxane derivative (page 15, first paragraph) is used as a surfactant, it fails to teach that the siloxane derivative is Addid 300.

Wacker Silicones Corp teaches that Addid 300 is an additive for a UV Curable system (Wacker Silicone Corp, Booth 1105 section). It is evidenced by Turgis that Addid 300 is a silicone product used to adjust the flow, surface tension and gloss of a cured printing ink ([0075]).

It is noted that Turgis does not antedate the filing date of the instant application. However, references cited to show a universal fact need not be available as prior art before applicant's filing date. Such facts include the characteristics and properties of a material or a scientific truism, see MPEP 2124.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the Addid 300 as taught by Wacker Silicone Corporation as the siloxane derivative in Johnson. This would be nothing more than using a known compound in a known environment to produce predictable results. KSR v. Teleflex, 550 U.S. ___, 82 USPQ2d 1385 (2007).

Regarding the limitations in claims 25, it is noted that since Addis 300 is the same composition as used in the present invention, it is clear that the composition would inherently be a tetraacrylate-modified polydimethylsiloxane having fifteen dimethylsiloxane groups and is not further organo-modified and not polyether-modified.

Case law holds that a material and its properties are inseparable. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Regarding claims 1-4, modified Johnson teaches all the components of the claimed invention, therefore, it is therefore inherent that the prior art composition has the desired nozzle loss property and the desired hole to area ratio since such properties are evidently dependent upon the nature of the composition used. Case law holds that a material and its properties are inseparable. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Regarding claims 5 and 6, Johnson teaches that the silicone derivative is used in an amount from 0.1 to 0.6 wt % of the ink (page 14, line 6).

Regarding claims 11-12, modified Johnson teaches that the surfactant added is Addis 300 and Addis 300 is not further organo-modified nor is it polyether-modified.

Regarding claim 17, Johnson teaches an ink composition consisting essentially of:

- 0.01% to 50 % by weight of pigment (page 7, paragraph 4).
- 15 to 100 % of a dispersant system (based on the amount of pigment) (page 8, paragraph 2).
- UV-curable organic diluent which consists of
 - monofunctional (20 to 60 %, page 15, paragraph 2) and
 - difunctional and tri or higher functional material (5 – 30 % by weight, page 16, paragraph 2).

- It is noted that the sum of these 2 components make up the UV-curable organic diluent and therefore the total amount of organic diluent in the ink composition is (25-90 % which reads on the claimed limitation).
 - silicone derivative (surfactant) is used 0.1 to 0.6 wt % of the ink (page 14, line 6).
 - 3% to 15 % by weight of photo initiator (page 19, paragraph 2)
7. **Claims 23** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Johnson et al (WO 99/29787)** in view of **Wacker Silicones Corp, Booth 1105, Metal Finishing Volume 99, Issue 10, October 2001, Page 50.**
(<http://www.sciencedirect.com/science/article/B6TX7-455X3NP-7P/1/b2b67ba0ddc24327127f1f8949ac36df>) with evidence provided by **Turgis et al (US 2004/0157959).**

The rejection is adequately set forth in paragraph 12 of the Office Action mailed on January 14, 2009 and is incorporated here by reference.

Response to Arguments

8. Applicant's arguments filed July 14, 2009 have been fully considered but they are not persuasive for the reasons set forth below.
9. **Applicant's arguments:** Applicant disagrees with the examiner's argument that the composition of Johnson will have inherently have the desired properties as presently claimed.

Examiner's response: *The examiner has used a combination of references in an obviousness-type rejection. It is this combination of references (not only Johnson) which inherently have the desired properties. As elucidated above, as the prior art*

teaches all the components of the claimed invention, the prior art composition will inherently have the claimed properties.

10. **Applicant's argument:** The Wacker Silicone reference does not specifically state that Addis 300 is a surfactant; rather, it states that it is an additive.

Examiner's response: *The examiner does not rely on Wacker Silicone to teach that Addis 300 is a surfactant. Johnson teaches that a silicon-derivative, such as silicon acrylates (page 14, last 3 lines) reduces the surface tension (page 13, final paragraph). Surfactants, generally speaking, reduce the surface tension of the liquids in which they are incorporated, as such, the prior art meets the "surfactant" limitation of the claimed invention.*

11. **Applicant's argument:** Turgis does not establish that Addis 300 is a surfactant. Turgis relates to an aqueous ink composition and the presently claimed invention is a non-aqueous ink.

Examiner's response: *The examiner does not rely on Turgis to teach that Addis 300 is a surfactant. Johnson teaches that a silicon-derivative, such as silicon acrylates (page 14, last 3 lines) reduces the surface tension (page 13, final paragraph). Surfactants, generally speaking, reduce the surface tension of the liquids in which they are incorporated, as such, the prior art meets the "surfactant" limitation of the claimed invention. Regarding that the ink composition in Turgis is aqueous, it is the examiner's position that Addis 300 is taught as an adjuvant which is capable of being used in energy curable inks in general ([0075]) and therefore would have been obvious to a*

person of ordinary skill in the art at the time of the invention to use in any type of energy curable printing ink.

12. **Applicant's argument:** Applicant has presented unexpected results in Table 2 of the specification.

Examiner's response: *The examiner has considered the data in Table 2 and has determined that applicant's argument of unexpected results is not persuasive. Applicant has not shown data which is commensurate in scope with the claimed invention. The applicant has only provided data where the surfactant concentration is 0.3 wt %. Is the advantageous and unexpected property still apparent at a surfactant loading of 0.0001 wt%? It is also noted that Ink Formulation D, which has a surfactant which is outside the scope of claim 23 also exhibits the desired nozzle loss and hole to area ratio. It is also noted that Ink Formulation C, which meets the limitation of claim 23, does not meet the limitations of dependent claim 4. For these reasons, applicant's argument of unexpected results has not been found persuasive.*

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Doris L. Lee whose telephone number is (571)270-3872. The examiner can normally be reached on Monday - Thursday 7:30 am to 5 pm and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Doris L Lee/
Examiner, Art Unit 1796

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796